ST.THOMAS SCHOOL, INDIRAPURAM
HOLIDAY HOME WORK 2019
CLASS XII

PHYSICS

1. **Prepare a file of activities. The aim of activities are as follows**:

   i. To assemble a household circuit comprising three bulbs, three (on/off) switches, a fuse and a power source.

   ii. To assemble the components of a given electrical circuit.

   iii. To study the variation in potential drop with Length of a wire for a steady current.

   iv. To draw the diagram of a given open circuit comprising at Least a battery, resistor/rheostat, key, ammeter and voltmeter. Mark the components that are not connected in proper order and correct the circuit and also the circuit diagram.

   v. To identify a diode, an LED, a resistor and a capacitor from a mixed collection of such items.

   vi. To observe refraction and lateral deviation of a beam of tight incident obliquely on a glass slab.

2. **Prepare the Investigatory Project file as per the instructions given in class (topics have been allotted in class)**

3. **Solve the uploaded worksheets of chapter 1, 2 and 3.**

**WORKSHEET - 3**

Current electricity

1. 4 cells of identical emf Ɛ, internal resistance r are connected in series to a variable resistor. The following graph shows the variation of terminal voltage of the combination with the current output:
   (a) What is the emf of each cell used?
   (b) For what current from the cell, does maximum power dissipation occur in the circuit?
   (c) Calculate the internal resistance of each cell.
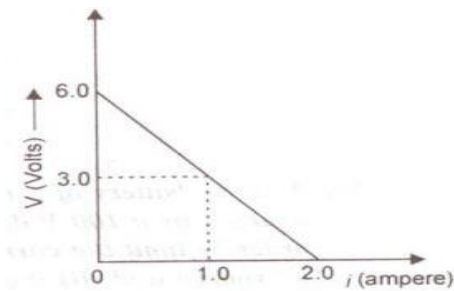
2. A potential difference V is applied to a conductor of length L, diameter D. How are the following i) electric field $\mathcal{E}$, drift velocity V, resistance R affected when
   i) V is doubled
   ii) L is doubled
   iii) D is doubled.

3. The V-I graphs of two resistors and their series combination are shown in fig, which one of these graphs represents the series combination of the other two? Give reasons for your answer.
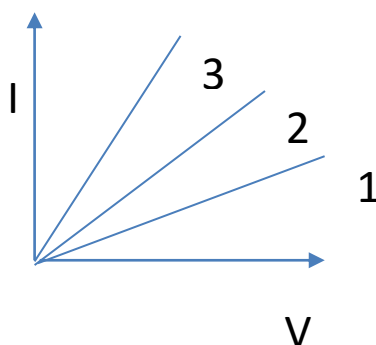
4. A resistance R= 2 Ω is connected to one of the gaps in a meter bridge, which uses a wire of length 1m. an unknown resistance X>2 ohms is connected in a gap. The balance point is noticed at 'l' from the positive end of the battery. on interchanging R and X, it is found that the balance point further shifts by 20cm (away from end A). calculate the value of unknown resistance X used.
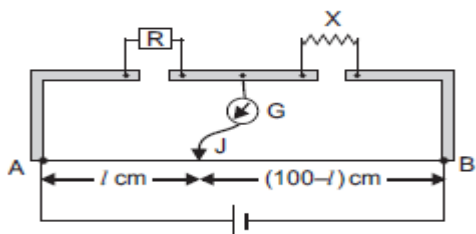

5. Two cells of emf 6 V and 12 V and internal resistance 1 Ω and 2 Ω are connected in parallel so as to send current in the same direction through an external resistance of 5 Ω. Using Kirchhoff law calculate i) current through each branch of the circuit, ii) potential difference across the 5 Ω resistance.
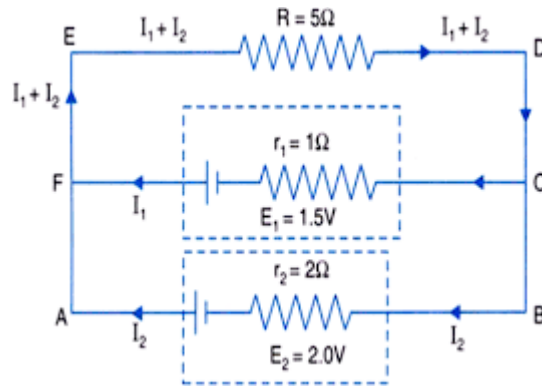
6. A 10 m long wire of uniform cross- section and 20 Ω resistance is used in a potentiometer. The wire is connected in series with a battery of 5 V along with an external resistance of 480 Ω. If an unknown emf ε is balanced at 6.0 length of the wire, calculate :

(i) the potential gradient of the potentiometer wire.

(ii) The value of unknown emf ε.
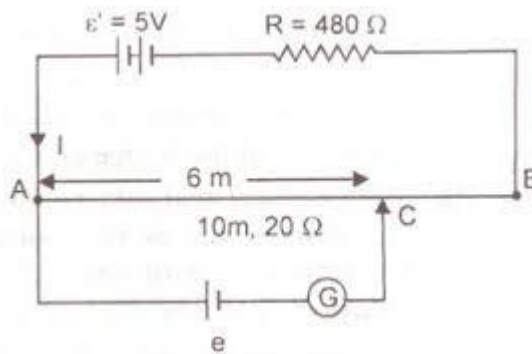
7. Six equal resistors each of value R are joined together as shown in fig. Calculate the equivalent resistance across AB. If a supply of emf Ɛ is connected across AB, compute the current through arms DE and AB.
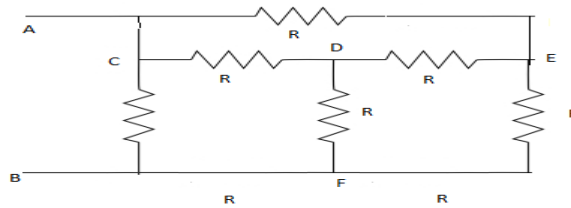
8. A Battery of EMF Ɛ and internal resistance r gives a current of 0.5 A with an external resistor of 12 Ω and a current of 0.25 A with an external resistor of 25 Ω. Calculate internal resistance of the cell and EMF of the cell.

9. 12 cells each of emf 1.5 V and internal resistance and internal resistance of 0.5 Ω, are arranged in m rows each containing n cells connected in series as shown. Calculate the value of n and m for which this combination would send maximum current through an external resistance of 1.5 Ω.

R − 1.5 Ω

n

m rows

(n cells in each row)
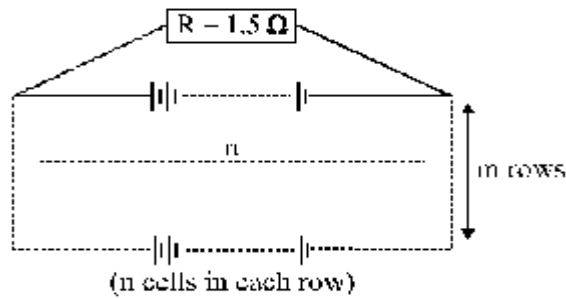
10. Is current density a vector or scalar quality? Deduce the relation between current density j and potential difference V across a current carrying conductor of length l area of cross section a and number of density free electrons n. ow does current density, in a conductor vary with
(a) increase in potential gradient?
(b) increase in temperature?
(c) increase in length?
(d) increase in area of cross-section?
(Assume all other factors remains constant in each cases)

CHEMISTRY

1. Do all practical related written works that teachers already   discussed in classroom.

2. Do investigatory project work.(collect the materials necessary   for related work.)

3. Do the uploaded worksheet.

BIOLOGY

1.Write the Experiment -2,3,4,5,6,9,10,11,12 and 13 in the practical file
2. Revise and learn chapters 5,6 and 7 for unit test

COMPUTER SCIENCE

Do the project , practical file questions and assignments (downloads->Senior->Class XII)

ECONOMICS

1. Objective of the project is to enable learners to analyse and evaluate real world economic scenarios using theoretical constructs and arguments. Students will use the following steps to prepare a 'ROUGH DRAFT' of project.
Step 1.> Choose a topic from the list given in class or any other relevant topic from syllabus or from current Economic scenario of India or world.
Step 2.> Collection of the research material /data from news media , govt. policy, RBI bulletin, NITI Aayog reports , IMF/World bank reports , news paper cuttings , Survey reports or any other Reliable source.
Step 3.> Organise the material / data.
Step 4.> Analysing the material/data for conclusion.

2. Work in fair note books should be complete.
3. Test of all the chapters done in class will be on 3-7-19.
NOTE: i) Students will prepare project after discussion with subject teacher. For discussion or any

query contact 9213306968 and e.mail sharmashelja @ yahoo.co.in
ii) Material /data must be collected by all the students.

<u>ENJOY HOLIDAYS</u>

ACCOUNTANCY

Prepare Accountancy Project file on comprehensive problem, specific problem - 1 (segment analysis) and specific problem – 2 (Cash Flow Statement) as per C.B.S.E guidelines and instructions given in the class.
Revise the syllabus for UT -1.

GEOGRAPHY

Do survey on poverty and collect the data.
Complete the practical work done during extra classes.

PHYSICAL EDUCATION

1- Procedure for Asana, Benefits and contraindications of any three Asana for each life style disease.

  Life style diseases are- Asthma, Back-pain, Diabetes, Hypertension and Obesity.

2- Procedure for administering Senior Citizen Fitness Test for 5 elderly families on the basis of Reiki and Jones

   Senior citizen fitness test.

3- Any one game of your choice out of the list below. Labelled diagram of field and equipment

(Skills, Rules, national and international competition, notable players, famous venues and terminologies.

(1) Basketball (2) Cricket (3) Football (4) Kabaddi (5) Kho-Kho (6) Volleyball

Political Science

1. <u>PROJECT WORK:</u>
   - Prepare a project, details of which are shared in the classroom.
2. <u>READING TASK</u>
   - Read the newspaper especially the editorial page daily.
   - Revise Chapter 1 to 3 (India)
              Chapter 1 to 3 and 8 (World)

History

Complete the assigned project.

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